Global Forms in Modern Skyscraper Design: The Chicago Case

Formas globales en el diseño de rascacielos modernos: el caso de Chicago

Formas globais no design moderno de arranha-céus: o caso de Chicago

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Abstract

Globalization, as in many other fields, is a subject of extensive debate in architecture. The emergence of a global architectural language, particularly using similar construction techniques and universal materials, has led to an international aesthetic understanding, often prioritizing global forms over local cultural expressions. Globalization in architecture has predominantly influenced form, resulting in geographically independent design clusters spreading worldwide. This study examines these global design formations through the lens of skyscraper architecture. The study area is Chicago, recognized as the birthplace of skyscrapers and a city emblematic of skyscraper culture. Field visits to the region were conducted, and the selected area was documented photographically. The typological classifications of form discussed in the studies of Erbay (2007) and Gür (2023) were analyzed within the context of this specific study area. The aim of this study is to investigate the formal typologies of modern skyscraper architecture in Chicago by evaluating how globalization has influenced building form. The findings demonstrate that the identified design clusters align with the form classifications established in the referenced works.

Keywords: Chicago; Global Architecture; Globalization; Modern Architecture; Skyscraper.

Resumen

La globalización, al igual que en muchos otros campos, es un tema de amplio debate en la arquitectura. El surgimiento de un lenguaje arquitectónico global, especialmente mediante el uso de técnicas de construcción similares y materiales universales, ha fomentado una comprensión estética internacional, que a menudo prioriza las formas globales sobre las expresiones culturales locales. En arquitectura, la globalización ha influido predominantemente en la forma, lo que ha dado lugar a la expansión mundial de clústeres de diseño geográficamente independientes. Este estudio examina estas formaciones globales de diseño desde la perspectiva de la arquitectura de rascacielos. El área de estudio es Chicago, reconocida como la cuna de los rascacielos y una ciudad emblemática de la cultura arquitectónica de rascacielos. Se realizaron visitas de campo a la región y se documentó fotográficamente el área seleccionada. Además, se analizaron las clasificaciones tipológicas de la forma discutidas en los estudios de Erbay (2007) y Gür (2023) en el contexto de esta área de estudio específica. Los hallazgos demuestran que los clústeres de diseño identificados se alinean con las clasificaciones formales establecidas en los estudios citados.

Palabras Clave: Chicago; Arquitectura global; Globalización; Arquitectura moderna; Rascacielos.

Resumo

A globalização, assim como em muitos outros campos, é um tema amplamente debatido na arquitetura. O surgimento de uma linguagem arquitetônica global, especialmente por meio do uso de técnicas de construção semelhantes e materiais universais, levou a uma compreensão estética internacional, muitas vezes priorizando as formas globais em detrimento das expressões culturais locais. Na arquitetura, a globalização influenciou predominantemente a forma, resultando na disseminação mundial de grupos de design geograficamente independentes. Este estudo examina essas formações globais de design sob a perspectiva da arquitetura de arranha-céus. A área de estudo é Chicago, reconhecida como o berço dos arranha-céus e uma cidade emblemática da cultura arquitetônica dos arranha-céus. Foram realizadas visitas de campo à região, e a área selecionada foi documentada fotograficamente. Além disso, foram analisadas as classificações tipológicas de forma discutidas nos estudos de Erbay (2007) e Gür (2023) no contexto desta área de estudo específica. Os resultados demonstram que os grupos de design identificados estão alinhados com as classificações formais estabelecidas nos trabalhos referenciados.

Palavras-chave: Chicago; Arquitetura Global; Globalização; Arquitetura Moderna; Arranha-céus.

Introduction

Globalization and Architecture

Following the Industrial Revolution, advancements in technology, materials, and design techniques in the 20th century significantly influenced architecture. Particularly in newly established cities and urban peripheries, local architectural resources proved insufficient, leading to the adoption of rapid production techniques. As similar production methods spread globally, architectural forms began to resemble one another.

The concept of globalization was first introduced in the early 1960s by McLuhan in his book The Gutenberg Galaxy, where he discussed the consequences of the printing revolution initiated by Gutenberg and the potential impacts of the emerging electronic revolution. McLuhan (2014) coined the term “global village” to describe this phenomenon. Later, in The Medium Is the Massage, published in 1967, McLuhan (2001, p. 63) highlighted the transformative potential of communication technologies on individuals and socio-cultural structures, suggesting that we live in a simultaneous simulation within a global village.

Baudrillard (2011, p. 123) took this perspective further, arguing that the boundaries between content and form are dissolving as opposing poles are absorbed into one another. The most significant factor driving the widespread impact of globalization is the internet. Castells (2013) described the profound effects of an intense and rapid communication network on the global flow of information through his concept of the “network society.” Similarly, Hannerz (1995, p. 249) noted that cultural transformations occur through interconnected networks, enabling development independent of specific geographic regions.

Ultimately, globalization has led to cultures becoming increasingly homogeneous, resembling pieces that come together to form a unified whole (Featherstone, 1990, p. 3). When the ideas put forward by philosophical thinkers on globalization are associated with architecture, concepts such as the printing and electronic revolutions, technology, and the internet come to the forefront. Developments in material and construction technologies, along with their widespread use, and the increased visibility of architectural works through the internet, have paved the way for the imitation of architectural forms. The proliferation of similar buildings evokes McLuhan’s concept of the global village, while the dissolution of cultural boundaries through network technologies—as discussed by Baudrillard, Castells, Hannerz, and Featherstone—also supports this formal convergence. In other words, since architecture is a part of culture, it has inevitably been affected by globalization. This study focuses on how the formal language of architecture has been impacted within the context of globalization. Architectural forms, when perceived as works of art, can be seen as continuously repetitive when reproduced repeatedly. Benjamin argued that such reproduction diminishes the “aura” of a work of art and highlighted its strong connection with mass communication tools (Kula, 2013, p. 113).

Mignolo (2003) defines the process of civilization, or Modernity, as synonymous with globalization. In this context, a recurring circulation of similar and repetitive forms and form fragments can be observed between globalization and architecture. Architecture, as a cultural phenomenon, has both universal aspects tied to its global dimension and cultural aspects rooted in specific geographies. Culture, when considered through economic, political, and communicative dimensions, inherently transcends boundaries. Independent of the semantic analysis embedded within architecture, architectural forms, under the influence of globalization, repetitively replicate themselves and circulate freely and arbitrarily across the globe (Erbay, 2007).

Gür (2023) describes this phenomenon as the ossification of paradigms in mass and façade organization in modern architecture. Emerging with modern architecture, these design clusters—widely utilized by architects worldwide—differ across form, façade, and detail levels, contributing to the globalization of architecture through specific formal patterns.

This study examines architectural forms influenced by globalization at the formal level, focusing on skyscraper architecture. The city of Chicago, where skyscrapers first emerged, was selected as the research area.

Skyscraper Architecture and Chicago

Since the emergence of tall buildings in the late 19th century, various definitions of skyscrapers have been proposed. In 1929, Mujika described skyscrapers as “high-rise buildings with a steel skeleton structure and high-speed electric elevators” (Ali & Moon, 2022). During that era, the term “skyscraper” referred to buildings with 10 to 20 stories. By the late 20th century, however, it came

to denote extraordinarily tall buildings with over 40 to 50 stories (Encyclopaedia Britannica, 2024).

According to Emporis standards, a high-rise building is defined as a multi-story structure with at least 12 stories or a height of 35 meters (115 feet). In contrast, a skyscraper is classified as a subset of high-rise buildings, with a structural height of at least 100 meters. Nevertheless, the concept and meaning of “skyscraper” can vary depending on the context in which it is used. For instance, while a 25-story building may be considered a skyscraper in a small town, in cities such as Hong Kong or Chicago, a building typically needs to have at least 50 or 60 stories to be classified as a skyscraper (Emporis Standards, 2024).

High-rise buildings were first constructed in America, specifically in New York and Chicago. In particular, the fire in Chicago in 1871, which lasted over a day and destroyed more than 18,000 buildings, led to the city’s reconstruction. During this process, architects from the Chicago School, including Le Baron Jenney, Daniel Burnham, John W. Root, Louis Sullivan, and Dankmar Adler, played significant roles. Sullivan’s admiration for high-rise buildings was encapsulated in his belief that “There cannot be a new New York, but there can be a new Chicago.” This view, while controversial, was also accepted, and Chicago began to be rebuilt (Abbott, 2000; Sullivan, 2009; Schons, 2011; Leslie, 2013; Merwood-Salisbury, 2013; Fenske, 2013; Skarbek, 2014).

The Home Insurance Building, designed by William Le Baron Jenney in 1885, is considered the first skyscraper in architectural history, although it was only 42.1 meters tall (Ali & Moon, 2022). The first true skyscraper, however, is the 241-meter Woolworth Building, designed by Cass Gilbert in 1913 in New York City. Today, Chicago boasts nearly 300 skyscrapers over 140 meters in height, making it the second city in the U.S., after New York, with the most skyscrapers.

Hasol (1997) notes that Chicago holds a central place in U.S. architectural history and has carried the legacy of Modern Architecture and skyscrapers through a consistent chain of continuity to the present day. Koolhaas (1978; 1995) regards skyscrapers as one of the most significant typological inventions of architecture in the 21st century. According to him, skyscrapers represent both the success and the failure of modernism, as he argues that buildings have become more functionless and devoid of identity. Frampton (1983; 2007), on the other hand, interprets this loss of identity as the erasure of local character, emphasizing that the emerging forms have become increasingly anonymous. He identifies skyscrapers as some of the most striking examples of globalized architecture.

In architecture, typology can be defined as the shaping of design through specific forms that reflect a particular attitude (Schön, 1988). In literature, many theoretical studies on architectural form typology focus on the origins of typification, its role in traditional and contemporary design, its philosophical foundations, and its relationship with meaning (Rossi, 1966; Moneo, 1978; Kelbaugh, 2009). While such studies acknowledge formal similarities at the urban and architectural scales, there appears to be a lack of specific research on the classification of forms within a global context.

In the light of this information, the aim of the study is to investigate the formal typologies of modern skyscraper architecture in Chicago by evaluating how globalization has influenced building form. The research is structured around the following question: How have skyscraper structures in Chicago been influenced by globalized architectural forms in terms of formal design? Based on this question, the study assumes that the global architectural language has detached from local contexts, resulting in the repetition of similar architectural forms worldwide. For this purpose, the study classifies the mass forms designed in skyscraper architecture, analyzes the relationships between height and form preferences over the years, and interprets current formal trends in skyscraper design.

Materials and Method

One of the rare contributions in this area is Erbay’s (2007) doctoral dissertation, which includes 62 sub-classifications of globalized architectural forms based on form, format, and tectonic detail. This classification is notable for being derived from a selection of 1,250 examples taken from a broader dataset of 3,000 buildings that have appeared in architectural literature since the beginning of modern architecture. Naturally, the expansion of this classification over time is inevitable. In particular, products of parametric and computational design have introduced new subcategories. Gür’s (2023) classification of globalized architectural forms includes these emerging subcategories. Among other theoretical frameworks on architectural typology, Rossi (1966) views typology as part of urban memory, whereas Moneo (1978) considers types as intellectual representations of buildings. In this context, the classifications proposed by Erbay (2007) and Gür (2023) provide a relevant and up-to-date foundation for

this study, especially in addressing postmodern global architectural formations. The evaluations conducted focus solely on the façade/form level, excluding plans and sections. Initially, the classifications proposed in the mentioned studies were examined through a pilot study. Based on this assessment, five categories associated with high-rise forms under the theme of 'form' were selected for analysis within the scope of this research.

The study focuses on Chicago, a city renowned for its skyscrapers. The selected buildings are located along three main urban axes situated between Lake Michigan and the Chicago River. These axes represent the most characteristic areas in terms of tourist activity, architectural diversity, and building density. To qualify as a skyscraper, the minimum height criterion was set at 150 meters, as defined by the Emporis Standards (2024) for the city of Chicago. All buildings included in the study were photographed by the researcher during fieldwork conducted in 2022, and their heights were verified through the skyscraper page database (SkyscraperPage, 2024). A total of 71 skyscrapers meeting these criteria were included in the analysis. The buildings included in the study were constructed between 1927 and 2022. The photographs obtained during fieldwork were taken in a way that captured the façades of the buildings as clearly as possible. However, due to limited access to architectural plans, sections, or elevation drawings, the analysis primarily focuses on the massing and formal configurations of the buildings. The examined buildings are marked on the Chicago map (Figure 1).

The names of the buildings examined in the study are provided in Table 1. As mentioned earlier, only structures taller than 150 meters have been included in the study, due to Chicago's status as a skyscraper city. First, a preliminary investigation was conducted for each building to determine descriptive characteristics such as architecture, year of construction, height, function, and architectural style. Since the architect and architectural style are considered to have a direct influence on the building's form, these elements were excluded from the formal evaluation.



Figure 1. Map showing the skyscrapers analyzed along the Chicago Riverwalk corridor within the downtown high-rise zone, which defines the spatial scope and focus of the study (Created by the authors).

In this study, global architectural formations are addressed at the mass level, that is, at the form level. The common tendencies observed in the mass formations of modern architectural structures have been evaluated in parallel with the classification made by Erbay (2007) and Gür (2023). In this study, five classification models at the form level related to skyscraper architecture are discussed. These formations are further elaborated with examples in the analysis section. Subsequently, the statistical distributions of the samples within the study area were examined and analyzed in line with these classifications.

No	Building Name	No	Building Name	No	Building Name	No	Building Name
1	235 West Van Buren	19	150 North Riverside	37	Illinois Center - Michigan Plaza South	55	Harbor Point
2	311 South Wacker Drive	20	River Point	38	Carbide & Carbon Building	56	North Harbor Tower
3	Willis Tower	21	Wolf Point East Tower	39	Michigan Avenue Tower	57	St. Regis Chicago
4	200 South Wacker Drive	22	Wolf Point West	40	Mather Tower	58	Lakeshore East - The Tides
5	111 South Wacker Drive	23	300 North LaSalle	41	Trump International Hotel and Tower	59	340 on the Park
6	71 South Wacker Drive	24	LaSalle-Wacker Building	42	River Plaza	60	Aqua
7	CME Center	25	One Eleven East Wacker	43	NBC Tower	61	Blue Cross Blue Shield Tower
8	Heller International Building	26	Grant Thornton Tower	44	Optima Signature	62	Park Millennium
9	AT&T 10 South Canal	27	77 West Wacker Drive	45	455 North Park Drive	63	Aon Center
10	One South Wacker	28	321 North Clark	46	465 North Park Drive	64	Two Prudential Plaza
11	One North Wacker	29	353 North Clark	47	River East Center	65	One Prudential Plaza
12	Civic Opera Building	30	AMLI River North Tower	48	River East Center	66	Smurfit-Stone Building
13	Accenture Tower	31	Leo Burnett Building	49	One Bennett Park	67	The Heritage at Millennium Park
14	110 North Wacker	32	Marina City II	50	North Pier Apartments	68	Pittsfield Building
15	Boeing International Headquarters	33	Marina City I	51	500 North Lake Shore Drive	69	Legacy at Millennium Park
16	151 North Franklin	34	330 North Wabash	52	Lake Point Tower	70	Mid-Continental Plaza
17	155 North Wacker	35	The Prudential Building	53	Cirrus Condominiums	71	CNA Plaza
18	191 North Wacker	36	35 East Wacker Drive	54	The Parkshore		

Table 1. List of buildings examined in the city of Chicago.

Findings

Erbay (2007) categorized form formations into 15 types, while Gür (2023) considered 11 different forms. In this context, the first five classifications were used in relation to skyscraper architecture, and mass formations were classified specifically for the city of Chicago. These formations include minimalist-monolithic vertical prisms, vertical prisms with weakened monolithic effects, Gothic roofed prisms, curved lateral surface forms, and

cylindrical forms (Figure 2).

In the explanation of the findings, the form typologies associated with skyscraper architecture were first described. Subsequently, a separate diagram was created for each typology. In these diagrams, the buildings considered to represent the relevant form typology were presented in accordance with the numbering provided in Table 1, along with their year of construction, building height, and the visual representation on which the typology was illustrated. In this way, the perception of the aforementioned form typology was facilitated. Effort was made to ensure that the visuals included in the diagrams feature photographs taken by the author

during site visits.

1. **Minimalist-Monolithic Vertical Prisms:** These are prisms that reflect Mies van der Rohe's principle of "Less is more." They are square or rectangular-based, minimalist, monolithic, multi-story buildings with an extremely simple facade and flawless roof finishes, representing pure architectural forms. The first applications of glass, steel, and reinforced concrete in high-rise buildings were these simple skyscrapers, which began to be widely used worldwide after the 1950s. Figure 3 provides the buildings identified within the study area.

2. **Vertical Prisms with Diminished Monolithic Effect:** These are forms in which the impact of minimalist, simple prisms are reduced, and the purist approach in plan and facade is broken. This approach manifests itself through actions like voids, different facade textures, and the pushing and pulling of the form. Among the structures examined in this study, this form of configuration was the most observed in this category. These structures are presented in Figure 4.

3. **Vertical Prisms Ending with Gothic Roofs:** A different approach to differentiating flat roof finishes in minimalist, flat-facade prisms are the use of Gothic forms in the roof terminus. Particularly in New York, early skyscrapers applied stepped roof terminations as a reference to Gothic refinement, and in recent times, many architects have utilized these techniques to achieve a unique aesthetic, transforming them into a standalone mass form. In the early years of modern architecture, Gothic-like buildings in classical styles were prevalent, but later,

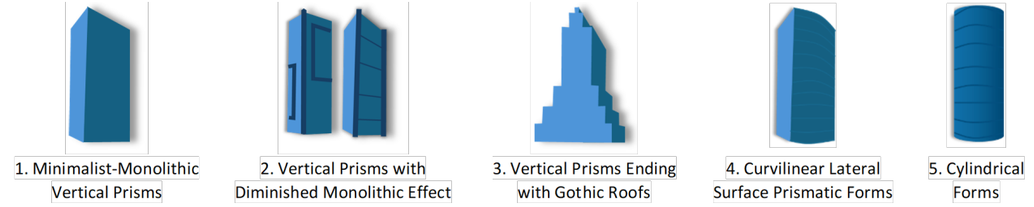

Figure 2. Schematic representations of forms (Created by the authors).

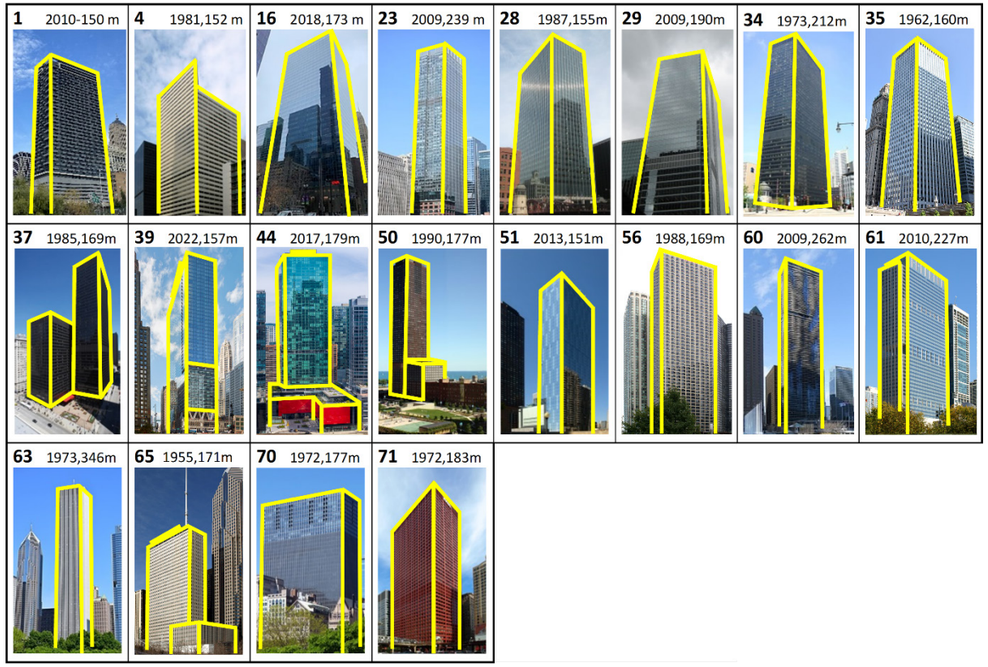

Figure 3. Minimalist-monolithic vertical prisms identified in the study area, illustrating the global spread of pure geometric forms (Created by the authors).

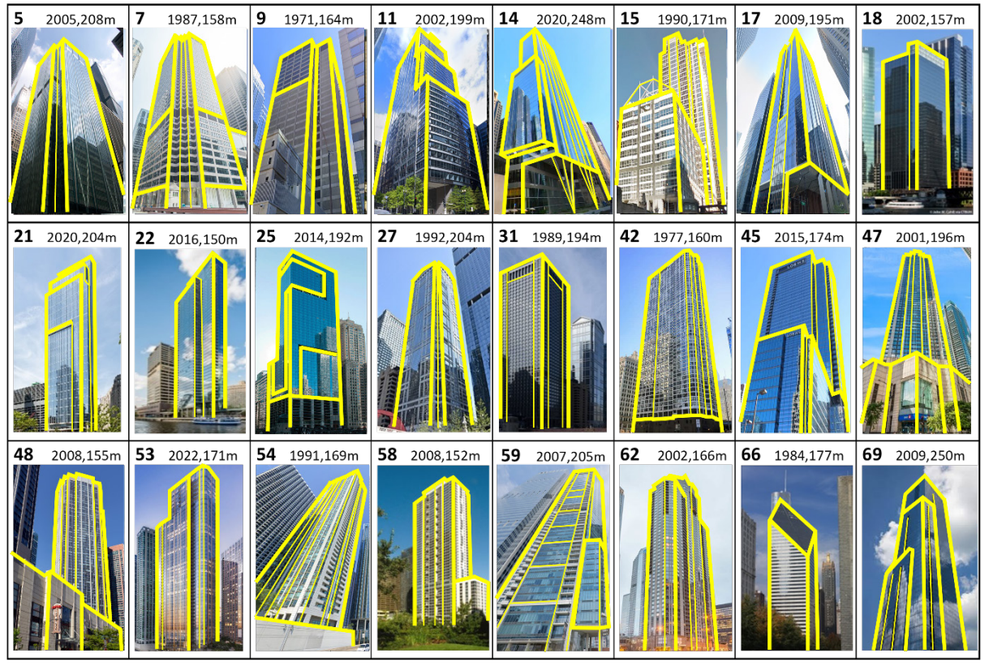

Figure 4. Vertical prisms with diminished monolithic effect observed in selected skyscrapers, showing increased formal variation within the study area (Created by the authors).

modern interpretations of these forms also became apparent. The structures identified in the study area are presented in Figure 5.

4. **Curvilinear Lateral Surface Prismatic Forms:** With the development of technology and construction techniques, the use of curvilinear surfaces has become a distinct form of shaping, especially in vertical structures, thanks to modern formwork systems. Unlike the use of arches, vaults, and domes traditionally required to span large openings before modern times, curvilinear surfaces have added dynamism to facades. The structures identified in this category are presented in Figure 6.

5. **Cylindrical Forms:** These are mass forms based on a circular base, typically cylindrical in shape. Due to advances in construction techniques, these forms became more prominent in later periods, although they are not widely used. The structures identified in this study are listed in Figure 7.

In accordance with the classifications outlined above, the statistical distribution of the selected samples, including the first skyscrapers built in Chicago during the 1920s, is presented below;

Most of the buildings are in the range of 150-200 meters. As can be seen from the table illustrating Chicago's skyline, the number of buildings exceeding 300 meters in height is quite limited (Figure 8).

When looking at the distribution of floor heights over the years, it is observed that buildings did not exceed 200 meters until the 1970s. However, after the completion of the Willis Tower (1974, 442 m), which was the tallest building in the world at the time and held this title for many years, there was a slight increase in building heights. Considering that 11 buildings were constructed by 1970 and 9 more by 1980, it is observed that construction activity accelerated rapidly after 1980, and by 2000, the number of buildings had doubled along with an increase in their heights (Figure 9).

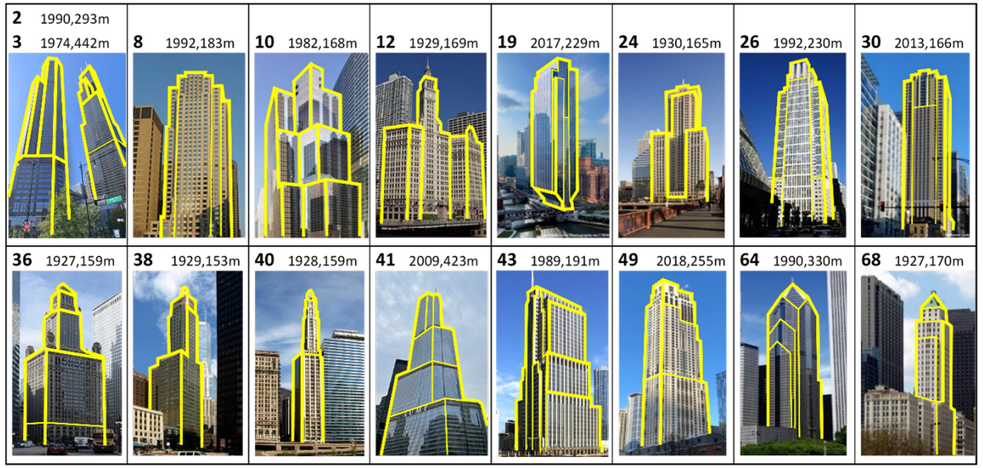

Figure 5. Vertical prisms with Gothic roof terminations identified in the sample, illustrating formal differentiation and symbolic aesthetic emphasis in skyscraper design (Created by the authors).

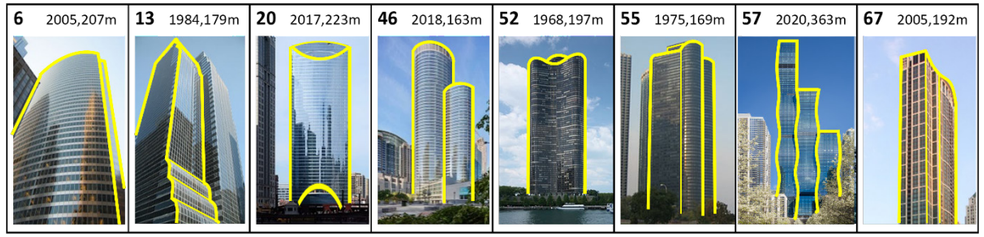

Figure 6. Curvilinear lateral surface prisms are identified based on form, reflecting the technological and dynamic character of modern skyscraper facades (Created by the authors).

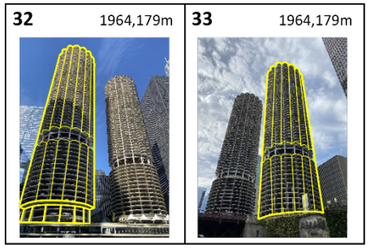

Figure 7. Cylindrical vertical prisms identified in the analysis, highlighting their rarity and structural significance in skyscraper design (Created by the authors).

When examining the usage of the buildings, it is observed that 52% of them are office buildings. Following that, buildings with residential and mixed-use functions are also present. The only structure in this area that is not considered a cultural structure is also shown (Figure 10).

When evaluating the form formations of the buildings in the analyzed examples, it is observed that the structures predominantly feature minimalist-monolithic designs, with a slight mitigation of this effect and Gothic-style roof finishes. The number of prisms with curved lateral surfaces is limited to 8, while the twin-block structure with a cylindrical body stands as a unique example. In examining the relationship between form typologies and their corresponding periods, it is observed that after 2000, the most preferred forms have been minimalist-monolithic vertical prisms and vertical prisms with a softened monolithic effect. In particular, when the building in question is a skyscraper, a Gothic roof is generally not preferred unless the height exceeds 300–400 meters. Cylindrical forms, on the other hand, have not been favored since the 1970s (Figure 11).

When examining the minimalist-monolithic vertical prism models, it is observed that prior to 1970, there were only two buildings of this style, indicating that it was not widely preferred for buildings taller than 150 meters. In general, lower-rise buildings in Chicago, which would be considered skyscrapers in many countries, were constructed in this style. However, when it comes to constructing taller buildings, other forms were preferred. From the 1970s to the 2000s, nine buildings were constructed in this style, and after 2000, another nine buildings followed the same pattern (Figure 12).

Monolithic impact-reducing vertical prism models started to be observed after 1970, with 18 buildings constructed after 2000, making it the most preferred skyscraper form (Figure 13).

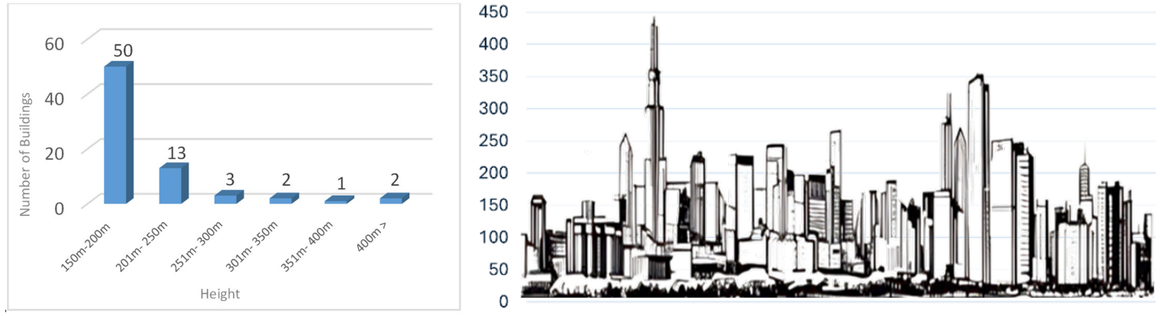

Figure 8. Building heights (a) and the current skyline of Chicago (b), showing a concentration around 150–200 meters.

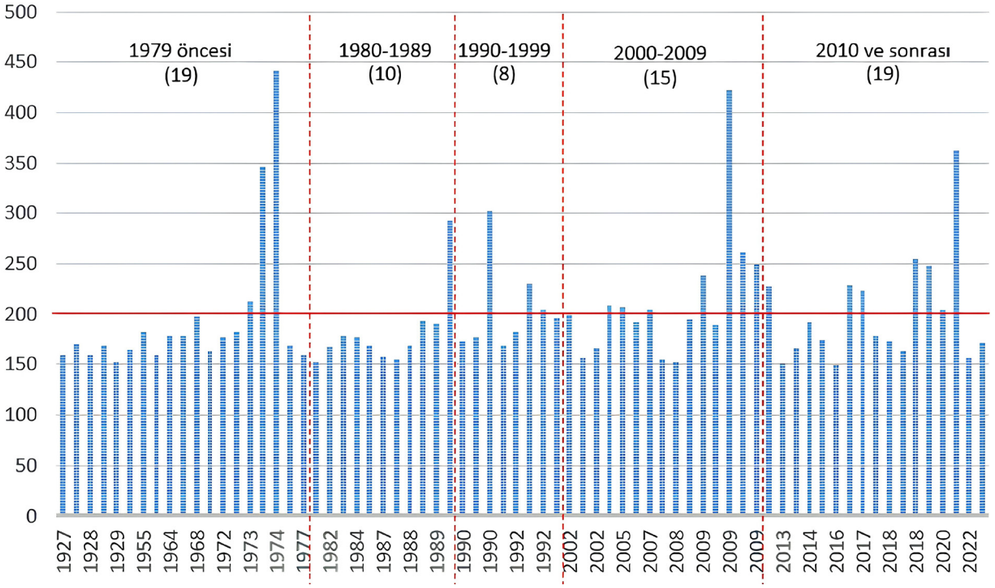

Figure 9. Timeline of building heights, showing increased construction activity and a sharp rise in both number and height of skyscrapers by 2000.

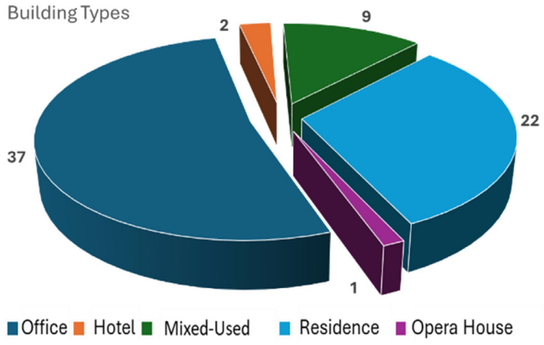

Figure 10. Functional use of skyscrapers, revealing office dominance and growing mixed-use trends.

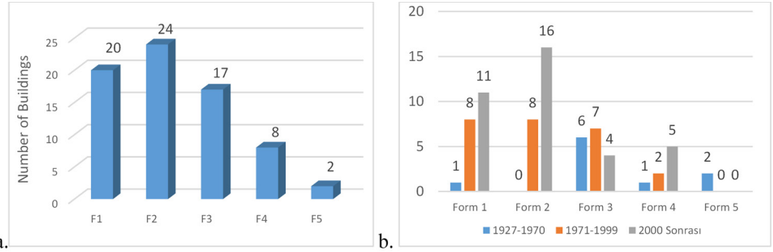

Figure 11. Building form types (a) and their evolution over time (b), indicating a shift from monolithic to varied global forms.

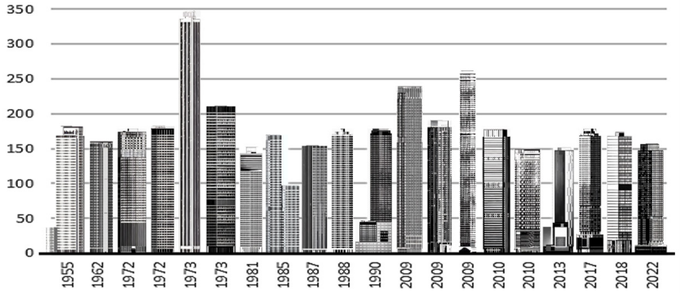

Figure 12. Temporal distribution of minimalist forms, showing a gradual shift toward greater formal variationover time.

Gothic roof-ended vertical prism models, when examined, were found to be the preferred form until the 1970s. Additionally, most of the tallest buildings also feature gothic roof finishes (Figure 14).

When examining the models of vertical prisms with curved lateral surfaces, it has been observed that they were less frequently chosen for high-rise building formations (Figure 15).

When examining cylindrical vertical prism models, it has been observed that, apart from Marina City I and II built in 1964, no other cylindrical vertical prism models have been encountered.

Conclusion

In this study, which examines the global architectural forms of skyscrapers specifically in Chicago, only the form of the building models classified by Erbay (2007) and Gür (2023) has been considered. The study focuses on buildings located along the city's busiest street, the Riverwalk along the Chicago River, extending to the street that leads to Millennium Park and includes Chicago's tallest and most iconic structure, the Willis Tower. The selected area represents the most characteristic part of the city in terms of architectural diversity and building density. Due to Chicago being a skyscraper city, buildings over 150 meters in height were included in the study.

In this study, the classifications were made solely based on external form. To ensure objectivity, architectural styles and architect names were deliberately excluded. This approach allowed for a clearer observation of how global formal tendencies are repeated independently of local contexts. Focusing exclusively on form directs the study toward the aspect through which the phenomenon of globalization can be observed in its simplest manifestation. However, addressing form alone also entails certain limitations, as form is the most easily perceived component of global architectural production and one that significantly shapes the urban skyline. Specifically, this approach restricts the ability to analyze the design intentions and cultural influences underlying the formal configurations. When technological, cultural, economic, and functional factors that influence skyscraper formation are overlooked, it becomes difficult to conduct in-depth analyses of why these forms have become homogenized on a global scale. Nevertheless, such investigations may constitute the subject of future studies and offer new perspectives for further research. The aim of this study is to reveal the global similarities in form clearly, while intentionally disregarding the complex dynamics behind them.

Among the form patterns examined, the most common models observed were the minimalist-monolithic square or rectangular-based vertical prisms and the vertical prisms where the monolithic effect was softened. The purist prisms designed by Mies van der Rohe in the 1950s with his "Less is more" approach became the most recurring

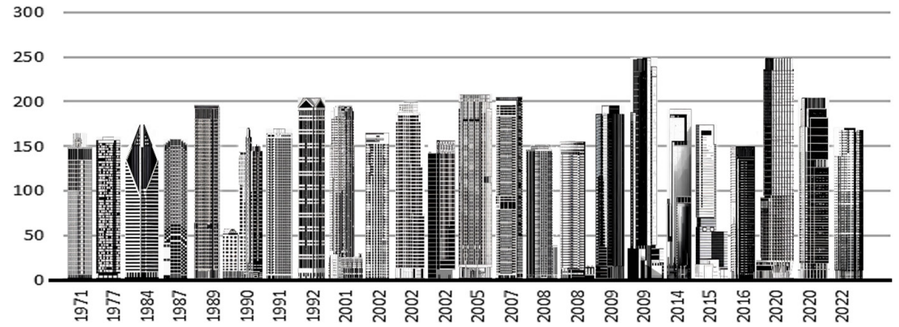

Figure 13. Temporal distribution of softened-monolithic forms, showing a gradual shift toward greater formal variation over time.

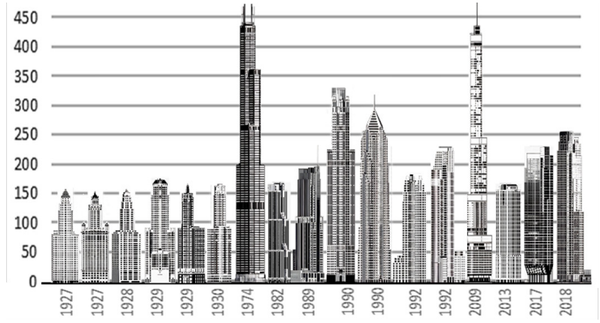

Figure 14. Gothic roofed forms illustrating their historical preference and symbolic role in vertical expression (Created by the authors).

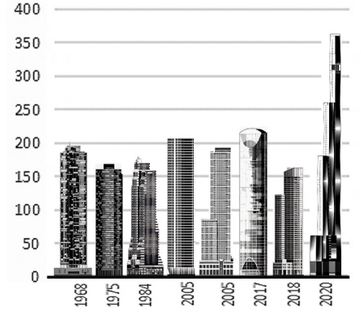

Figure 15. Curved prism forms illustrating limited use yet increasing stylistic diversity over time (Created by the authors).

form in skyscraper designs. Additionally, the Lake Shore Drive towers, designed by Mies van der Rohe between 1949-1951, although not part of the study area, are iconic skyscrapers in Chicago's skyline, with their 26 floors and 81 meters in height (LIFE Magazine, 1957). These buildings, often said to have redefined high-rise living after World War II, had a rapid influence that spread across the world. Thus, it is natural to encounter minimalist-monolithic square or rectangular-based prisms in skyscraper designs. The attempt to soften this effect represents an effort to introduce some dynamism to this otherwise uniform form model. It validates the standardization of global forms in modern architecture and their impact on the formal vocabulary of today's skyscrapers. The prevalence of these two form models in Chicago is seen as parallel to the development of skyscraper architecture following modernist trends. Within the study area, minimalist forms were rarely observed before the 1970s, whereas in the period after 2000, dynamic variations were added to these forms. This trend indicates that rigid modernist approaches in global architecture have diversified and become more flexible, with aesthetic exploration being reflected in formal variations.

The vertical prism form with a Gothic roof is one of the first models used in skyscraper architecture. The notion of verticality, which aligns with the spirit of the Gothic style, demonstrates that the pursuit of monumentality still exerts an influence on architectural form. Additionally, the construction technique, where the lower floors spread out to a larger area, allowed taller buildings. Vertical prisms with Gothic-style roof terminations are structures imbued with symbolic meanings that reflect formal hierarchy, particularly in the first half of the 20th century. A prime example of this design influence is Dubai's Burj Khalifa, which is also inspired by Gothic architecture, despite its modern appearance. In Chicago, the three tallest buildings—Willis Tower (1974, 442m), Trump Tower (2009, 423m), and St. Regis Chicago (2020, 363m)—are all examples of vertical prisms with Gothic roof finishes, confirming this pattern (Figure 16). These examples demonstrate that verticality continues as a monumental concept in global architecture and is reflected in the shaping of buildings.

When evaluating curved lateral surface and cylindrical prismatic forms together, it can be observed that they evolved in parallel with advances in construction and molding techniques. These forms were less preferred due to high labor costs, extended completion times, the need for special materials, and the difficulty of placing reinforcements in the interior spaces. However, they have been preferred in high-prestige projects that seek formal originality. In this context, the increase in formal diversity is not only linked to technological advancements but also to economic and cultural capital. In Chicago, Marina City I and II, completed in 1964, which have cylindrical masses, and Lake Point Tower, completed in 1968 with three curved lateral surfaces forming its shape, remain iconic structures in the city. Notably, the long, curved, asymmetric three-winged "Y" shaped floor plan of Lake Point Tower inspired the design of the Burj Khalifa in Dubai (Lake Point Tower, 2024). An example of this inspiration can also be seen in



Figure 16. Examples of vertical prisms with Gothic roof finishes; Willis Tower (a), Trump Tower (b), St. Regis Chicago (c) all three confirm the pattern identified in this form typology (Author's 2022 photo archive).



Figure 17. Comparison of curved skyscraper forms: Lake Point Tower-Chicago (a.) (Author's 2022 photo archive); Burj Khalifa-Dubai (b.) (Author's 2024 photo archive); Dumankaya İkon-Istanbul (c) (Arkiv, 2024), illustrating global influence.

Turkey's Dumankaya İkon (Figure 17). These examples demonstrate the global adoption of forms with curved lateral surfaces and the transfer of formal inspiration across different regions.

The skyscraper forms examined in this study are not unique to Chicago. Similar forms can be found in many cities across the United States, Europe, and the world. In the literature, Goncikowski's study on skyscrapers in Warsaw can be cited as an example. In his research, Goncikowski compared global forms with skyscrapers and demonstrated that typologies such as "free form," "polygonal form," and "obelisk form" are recurrent on a global scale. Similarly, Ilgın and Aslantamer (2024) examined prismatic, tapered, and free-form skyscrapers in terms of spatial efficiency and showed that certain geometric typologies exhibit global convergence. The study titled Review on Supertall Building Forms classified the world's tallest buildings according to their formal characteristics and emphasized that, despite differences in cultural contexts, similar formal strategies are increasingly used in skyscraper design (Ilgın, 2023). These examples indicate that the globalized forms observed in Chicago are not exclusive to the city; rather, similar typologies recur in different regions. Such comparisons reveal that skyscraper forms in Chicago parallel global trends and that formal globalization can be traced across different cities through similar typologies, independent of local context.

As observed, under the influence of globalization, clustered architectural forms are repeated worldwide, independent of geography. This study, conducted specifically on Chicago, supports this view and reflects traces of all the form models identified for skyscraper architecture. A significant portion of the post-2000 buildings are "vertical prisms with softened monolithic impact," reflecting a design approach caught between the pursuit of formal diversity and the persistence of formal uniformity. This suggests that while global architecture breaks away from local contexts, it also tends to constrain individual creativity. On the other hand, the continued preference for prisms topped with Gothic roofs in the tallest buildings implies that architects still seek symbolic and monumental forms. It can be argued that such formal explorations serve to overcome the limitations imposed by the repetition of global forms.

The classifications developed in this study reveal the effects of globalization purely through form. They demonstrate that the skyscraper form is not merely a technical design outcome but also a projection of broader cultural and economic systems. While global forms claim a universality that transcends local contexts, they often represent an anonymous and commercially driven architectural approach. The standardization of form in a city like Chicago offers a tangible example of the spatial anonymity produced by global architecture.

As one of the most representative domains of global architecture, skyscraper design is increasingly detaching from local context. Architectural forms have entered a self-repeating cycle under the control of capital and technology. The formal clusters observed in a skyscraper city like Chicago expose the effects of this cycle on architectural form.

In this study, the classifications were based solely on exterior form. As a recommendation, future research could focus on interior spatial organization, user experience, and energy performance. Additionally, future studies might explore how these formal clusters relate to criteria such as energy efficiency, urban identity, and user experience. Since the present study includes only buildings taller than 150 meters, future research could investigate how smaller structures affect these clustering patterns.

Finally, while the classifications by Erbay and Gür are highly explanatory, they are open to further development in the light of new form types emerging through parametric design and digital production techniques.

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Muteber Erbay. Conceptualization, Methodology, Planning, Supervision, Manuscript Preparation, Photography.

S. Asal Hojjati. Formal Analysis of the Work or Project, Investigation, Visualization Editing, Manuscript Preparation.

Data availability
The data used in this research are not publicly available in a database. However, researchers interested in accessing the dataset may request it directly from the corresponding author, Muteber Erbay.

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Image References

Figure 1, 7-15. Created by the author.

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Figure 16, 17 (1). *Author* (2022). Photo from personal archive.

Figure 17 (2). *Author* (2024). Photo from personal archive.

Figure 17 (3). Arkiv (2024). Dumankaya İkon. https://www.arkiv.com.tr/proje/dumankaya-ikon/3471